

Transforming the Training of Technical and Vocational Education Instructors Through Open, Distance and Flexible Learning: The Case of Malawi

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ABSTRACT

The Malawi Growth and Development Strategy 11, the blueprint that maps out the national development agenda from 2011 – 2016, recognises technical and vocational education and training (tevet) as a tool for propelling Malawi into a producing and exporting nation rather than the current predominantly consuming and importing one. However, the technical and education sector in Malawi is plagued by an acute shortage of well-trained instructors. Most instructors in technical colleges in Malawi do not possess a teaching qualification and mainly uses peer support and on-the-job experience to execute their responsibilities. Additionally, there is currently no single teacher training college in the country with a strong bias towards technical courses (NESP 2007 – 2017: 21). This paper explores how open, distance and flexible learning (ODFL) could transform the landscape in facilitating training for technical and vocational education instructors to meet demand. It discusses how new instructors could be trained and the current teaching staff could be upgraded to attain the relevant teaching qualifications with little disruption to their workload. Currently, there are also plans to construct 5 technical and vocational wings in the existing teacher training colleges and reduce the instructor-student ratio from 1:67 to 1:20 by 2017/18.

1.0 INTRODUCTION

The United Nations Educational, Scientific and Cultural Organisation (UNESCO) defines open learning and distance education as the approaches to learning that focus on freeing learners from constraints of time and place while offering flexible learning opportunities (UNESCO, 2013). The approaches include any educational process in which all or most of the teaching is conducted by someone geographically removed from the learner, with all or most of the communication between teachers and learners being conducted through electronic or print mediums.

Maclean & Lai (2011) observes that the terms technical and vocational education and training (TVET or TEVET), occupational education (OE), career and technical education (CTE) and vocational education and training (VET) are generally used interchangeably depending on geographical region but basically mean the same thing. UNESCO's International Centre for Technical and Vocational Education and Training (UNESCO-UNEVOC) views Technical and vocational education as a comprehensive term referring to those aspects of the educational process involving, in addition to general education, the study of technologies and related sciences, and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life (UNESCO-UNEVOC, 2013).

The 2009 Malawi Labour Market Survey notes that despite its potential to provide people with the necessary life competencies for full participation in all aspects of political, economic and social life, the technical and vocational education and training sector remains plagued by various challenges (TEVETA Malawi, 2009). Among other issues, the sector is affected by inadequate teaching staff, low qualified instructors, insufficient funding and limited infrastructure. The establishment of the Technical, Entrepreneurial and Vocational Education and Training (TEVETA) in Malawi in 1999, however, has brought a number of substantive achievements such as the development of the TEVET Qualifications Framework (TQF), institution of tevet quality monitoring and evaluation mechanisms, equitable access to quality technical and vocational education and training, regulation of TEVET training institutions and

alignment of TEVET curriculum in public institutions to the required skills of the Malawian economy. According to TEVETA Malawi's 2013 Register of Training Providers, there are 49 institutions providing technical and vocational education and training in the country.

Several studies and fora have identified skills gaps in the technical and vocational field in Malawi. The 2009 Malawi Labour Market Survey indicates that there is an unmet demand for skills in many fields which seems consistent for both the short to long terms (TEVETA Malawi, 2009). The survey further shows that while there is increased demand for bricklayers and vehicle body repairers, a majority of those in the industry obtained their knowledge and skills through experience. Upgrading artisans in the areas of painting and decoration, plumbing, carpentry and joinery, fabrication and welding, and general fitting would also be difficult because their level of formal education is low as they possess primary school education and would not meet the basic entry requirement in training institutions.

Alide (2007), in his paper presented at a University of Malawi symposium, noted that the availability of skilled personnel in Malawi forms a dumb-bell shape instead of the ideal triangular structure – with more artisans at the bottom, few technicians in the middle and more engineers at the top. A skills gap analysis conducted by the Central Training Advisory Board (1995) revealed that the output ratio of engineers to technicians and to artisans was 350:60:350. With the phasing out of technician diplomas at the Malawi Polytechnic, a constituent college of the University of Malawi in 2002, the technician shortage situation should be even worse. As outlined by the Malawi Institute of Education, Kufaine (2005) denotes that the working ratio of professionals in the construction industry is one engineer, to five technicians and to 25 artisans.

2.0 SITUATIONAL ANALYSIS OF TEVET TEACHER TRAINING

There is only one department at the University of Malawi's Polytechnic College which trains TEVET teachers in Malawi. Graduates from this college form only a small percentage of the teachers in TEVET institutions. The Department of Technical Education at the Malawi Polytechnic runs three undergraduate degree programmes – Bachelor of Science (Technical Education), Bachelor of Education (Technical) and Bachelor of Education (Business Studies) – which target teachers of technical subjects in secondary schools. The department enrolls an average of 80 students in every academic year. However, the department plans to introduce a graduate degree programme to be called Master of Technical and Vocational Education. It is hoped that the current TEVET instructors who possess the first degree would upgrade under this programme to enhance their teaching skills and knowledge.

A majority of the TEVET teachers therefore learn their work on-the-job. These are graduates from the technical and vocational education colleges who complete their studies with a good aggregate and are offered teaching positions in the colleges. Such people become TEVET teachers based on their mastery of the subject content rather than prior training in the teaching profession. Upon recruitment, these teachers are attached to an experienced mentor who orients them to the intricacies of the teaching process. Thus, these teachers acquire teaching skills while working and sharpen their ability with time.

Questions have been raised from various stakeholders about the competence of these TEVET teachers, and this forced the Technical Education Department at the Polytechnic to introduce programmes aimed at addressing the situation. Other sectors also argue that these teachers are forced into the teaching profession without any prior interest to pursue teaching as a career. They simply take up teaching positions in technical colleges due to scarcity of other lucrative jobs on the local market. This means that their commitment and dedication to the teaching job is equally questionable.

The World TVET Database, provided by UNESCO-UNEVOC (2013), indicates that among the teachers working in public technical colleges in Malawi, 50.9% hold a Bachelor of Science in Technical Education, 36.6% hold a Diploma in Technical Education, 10.7% hold a Certificate in Technical Education and 1.8% possess other qualifications. From these statistics, it can be seen that around 49.1% of the instructors in the technical colleges possess a Diploma or

lower qualification. The current crop of trainers rely more on on-the-job training and other mentorship arrangements with long-serving colleagues.

Formal technical and vocational education and training is provided in eight public technical colleges which offer four-year technical and vocational training courses. These courses comprise regular programmes which are sponsored and regulated by TEVETA and provided through apprenticeships, and parallel programmes which are administered independently by the technical colleges. The parallel programmes include both apprenticeship and non-apprenticeship programmes. The apprenticeship-based programmes begin with one year of initial training in the college followed by three years in which for each year, the students spend one term in college and two others in the industry.

The staffing levels in technical colleges are very low. While all the public technical colleges have a principal and deputy – entailing that the administrative posts are all filled, there are glaring gaps in the teaching positions. Table 1 below presents the status of staffing levels in the 7 public technical colleges (data provided by the Directorate of Technical and Vocational Education and Training, 2013).

STAFFING LEVELS IN TECHNICAL COLLEGES				
College	Department	Established Posts	Filled Posts	
			Male	Female
1. Lilongwe	Commercial	9	4	5
	Automobile	8	5	0
	Construction	11	6	0
	Engineering	14	5	1
2. Livingstonia	Commercial	10	4	0
	Automobile	5	1	0
	Construction	7	3	0
	Engineering	--	--	--
3. Mzuzu	Commercial	11	5	1
	Automobile	5	2	0
	Construction	7	5	0
	Engineering	--	--	--
4. Namitete	Commercial	9	2	0
	Automobile	--	--	--
	Construction	9	4	1
	Engineering	--	--	--
5. Nasawa	Commercial	7	3	2
	Automobile	8	4	0
	Construction	9	6	0
	Engineering	8	2	1
6. Salima	Commercial	9	2	1
	Automobile	5	1	1
	Construction	7	6	0
	Engineering	8	3	0
7. Soche	Commercial	9	3	2
	Automobile	5	0	0
	Construction	7	9	2
	Engineering	--	--	--

The table indicates that each of the seven colleges has significant shortage of teaching staff. The statistics reveal that 38% of the instructor positions at Lilongwe Technical College are vacant, 64% at Livingstonia, 43% at Mzuzu, 39% at Namitete, 44% at Nasawa, 52% at Salima and 24% at Soche. Furthermore, of the total 187 academic staff members in the seven colleges, only 17 are female – representing 9%. The figures therefore show that all the colleges are not doing well on gender empowerment.

Taking into account the current gaps in teaching staff in the technical colleges, there is an urgent need to train more TEVET teachers in Malawi. The graduate output of the Technical Education Department at the Polytechnic is far short of the current demand in the technical colleges including the private ones. Currently, the department produces an average of 70 graduates annually including those in non-education fields. Furthermore, not all of the education graduates end up picking teaching jobs after graduation. Some of them opt for high-paying jobs in the industry while others set up their own entrepreneurial ventures.

In the absence of a special college established for the purpose of training TEVET teachers and the low staffing levels in technical colleges, the gap in the numbers of TEVET teachers could be addressed through the provision of training using ODL. In view of this, the next section discusses how ODL could be adopted to train more TEVET teachers in order to meet the demand in the technical colleges.

3.0 INTEGRATION OF ODL IN TEVET TEACHER EDUCATION

Malawi, like most developing countries, is in the process of integrating open and distance learning (ODL) as a strategy for transforming the delivery of education to make the production of quality human resources more efficient and effective. Although the use of ODL in technical and vocation education and training is quite new in the country, there is a big possibility that the initiative could make TEVET more accessible and equitable across the populace.

The adoption of ODL in training the TEVET teachers would result in high graduate output to fill up the staffing gaps in the technical and vocational education colleges. ODL would also assist in ensuring that the lecturers, to be hired on part-time basis at institutions such as University of Malawi's Technical Education Department, Domasi College of Education and technical colleges themselves, would have ample time teach their normal hours in their work stations and also service the TEVET teacher training programmes. The use of ODL would also significantly reduce the cost of training since there would be little time spent in the physical classroom, laboratory and workshop. However, the application of ODL in the TEVET teacher training entails taking into account a number of considerations. It would therefore be important to first understand the pedagogical issues around teacher education.

Teacher education, whether in TEVET or other fields, needs to centre on pedagogical content knowledge which comprises both the content as well as pedagogical knowledge and forms the 'overarching knowledge comprising all of the knowledge bases (Turner-Bisset, 1999, p.47). Though with some reservation, Education International (2009, p.5) observes that "for the most part, general and academic education is seen as that which builds analytical skills, knowledge and critical thinking, while VET develops craftsmanship, practical experience and practical problem-solving". However, they note that critical thinking and analytical skills are equally needed in both kinds of education to perform neural functions such as problem solving.

Robertson (2008) proposes that the professional VET teachers require a full complement of teachers' knowledge bases in order to be able to practice at an expert level in routine and non-routine situations. He further notes that the objective is to prepare VET teachers who can work effectively in a diversity of environments with a diverse group of learners so that they are able to make sophisticated pedagogical decisions that are consistent with the needs of learners and clients. In addition, Corben & Thomson (2001) observe that TEVET teacher training should be a two-tier activity, initially providing opportunities to develop practical skills followed by learning at a conceptual level.

In the area of TEVET teacher education, ODL could be adopted as a way of producing increased output of teachers. Two models of ODL could, thus, be applied: the first one could combine face-to-face sessions with distance education, complemented by an attachment to a technical college; and the other could comprise all-out distance education coupled with a few weeks of teaching practice. In the first model, learners, in each academic year, would be provided with initial face-to-face instruction that would commence with an orientation period of one or two weeks to acquaint the learners with the structure of the programme, its

requirements and expectations. Thereafter, the learners would be sent on industrial attachment to provide them with an opportunity to apply the knowledge and skills learnt during the contact phase. Instruction would, however, continue to be delivered during the industrial attachment through methods such as mobile learning, internet and e-mail and distribution of print material.

The second model would involve no aspect of face-to-face contact. All communications with the learners would occur either online or through the post. The learners would be expected to apply for a place as well as register online or by posting their application. The model would require the learners to do all their learning from the distance but would be attached to a technical college for some teaching practice during the course of their study. This model would be ideal for existing teachers who are already employed in the technical colleges and would like to fortify their teaching profession as they would easily be able to readily transfer their skills to the classroom. It would also be suitable for people who already possess a TEVET qualification and are employed in the technical and vocational industry but would like change their career to teaching. Such people would be given a chance to study to become a qualified TEVET teacher with little disturbance to their work.

In Malawi, the TEVET teacher education programmes could either be implemented at existing institutions such technical colleges, Domasi College of Education (DCE) and the University of Malawi's Polytechnic or a new purposefully-built college. While qualified teaching staff are already present at the Polytechnic and DCE, the technical colleges could recruit new staff with teaching qualifications to spearhead the running of these programmes in their institutions. Domasi College of Education would, however, need additional support in form resources and equipment biased towards the technical and vocational field.

The delivery of TEVET teacher education through ODL can be as effective as any other academic programme so long as the principles of quality assurance are put in place and followed. Most of the existing teachers in the technical colleges in Malawi, who need upgrading in teaching skills, are mature people with varied amounts of experience in the tertiary education sector, either as students, tutors or both. This background would therefore be an important asset for them to easily grasp the academic demands of ODL and meet its expectations. The ODL delivery would also be in line with the conventions of outcomes-based education where independent learning is encouraged through the application of multiple perspectives in the analysis and solving of academic problems.

Another strong argument in favour of the delivery of TEVET teacher education through ODL is the fact this form of education would allow in-service teachers a chance to directly transfer the knowledge, skills and attitudes learnt in the programme to the classroom. As they read course materials on their own, discuss crucial topics with fellow learners using various means, tackle assignments and case studies, and interact with tutors, the teacher trainees would gain a lot of skills required in the teaching profession. The teaching practice incorporated in the curriculum design would therefore only complement what the teacher trainees already carry out in the day-to-day work.

The Revised UNESCO Recommendation on Technical and Vocational Education and Training observes that TEVET teachers should have the same status as their counterparts in general education (UNESCO, 2001). The recommendation further advocates that the preparation for technical and vocational teaching should preferably be offered as a tertiary programme and continuing education courses should be implemented to give teachers opportunities to update their knowledge and competences. Just like any tertiary programme, the training of TEVET teachers through ODL would be guided by regulations regarding admission, teaching and learning processes, assessment, quality assurance and monitoring and evaluation.

These regulations would apply to both the face-to-face and distance learning phases of the ODL TEVET teacher training programmes. Adherence to the regulations would therefore be crucial to ensure that there exists little – or no- deviation from the set academic standards. Managers and administrators in such programmes would, thus, be required to undergo appropriate training to become well-versed with the special issues in ODL related to their

particular roles and responsibilities. A quality assurance policy or booklet needs to be developed to comprise all critical guidelines for enhancing quality in the teaching, learning and assessment processes.

4.0 POSSIBLE CHALLENGES OF TRAINING TVET TEACHERS THROUGH ODL

There are a number of challenges which could be encountered in Malawi in the provision of TVET teacher training through ODL. A discussion of these challenges would be crucial so that strategies of addressing could be identified. One such challenge relates to the distribution of teaching and learning materials to the learners. Physical distribution of the learning materials could be a problem due to the poor state of road infrastructure in the country which would be vital in transporting the materials. Additionally, the post system is lowly developed to the extent that there are very few post offices where the learners could collect their materials. The learners would need to travel long distances to access post office services for submission of assignments and collection of learning materials in form of print, audio CDs and DVDs.

Distribution of the learning materials through electronic means such as e-mail and e-learning platform would also be a huge setback. Currently, internet services in the country exist in all the 28 districts albeit with poor internet connectivity. The internet speed is very slow in the districts – just like in the cities – and downloading as well as uploading of documents is an uphill task. Furthermore, there are very few internet cafes at the district level with an average of 2. This means that learners in remote areas would need to travel an average of 50 kilometres to reach their nearest internet café but with no guarantee for success in their wishes.

Currently, the government of Malawi is implementing a project to establish telecentres in the constituencies in the districts but the project is far from completion. The telecentres would be furnished with computers, copiers, fax and internet as one way of improving information access in the rural areas. The primary objective of the project is to enable use of information and communication technologies (ICTs) by people in the rural areas to access better opportunities for education, employment, information on health services, business opportunities including possibilities to live and work with confidence, thus curtailing the tendency for them to migrate to urban areas in search of greener pastures. The ODL TVET teacher trainees would utilise the services available at the telecentres during their study period.

The level of ICT development in Malawi also poses another challenge associated with the facilitation of learner-to-learner or learner-to-tutor discussions. Such e-forums would be limited – and in some cases not possible at all – due to poor internet connectivity and limited availability of ICT equipment at the district level. Currently, very few learners possess computers in Malawi, and even worse for those in the rural areas. This problem is exacerbated by limited or absence of electricity supply in some parts of the country. This situation renders the use of ICT equipment in such places impossible, and learners are disadvantaged in accessing electronic teaching and learning materials. However, the learners could purchase solar equipment to supply power in their homes although they would need to part away with significant amounts of money to acquire them. The problem of electricity also makes studying at night difficult. In most rural places, ODL TVET teacher trainees use candles or paraffin lamps to study after sunset. However, both alternatives require availability of funds to be utilised.

The lack of libraries and resource centres in some of the rural areas would also impede progress in the training of TVET teachers through ODL. The Malawi National Library has small public libraries in only 11 districts such as Mangochi, Nkhosha, Thyolo, Kasungu and Mulanje. However, the district councils also operate 15 other mini-libraries in some districts. These libraries are contributing a lot in the promotion of ODL programmes but are gravely under-resourced. Furthermore, access to the libraries is a limiting factor to learners in the remote areas of the districts due to long distances of travel and unavailability of public transport.

Mobile learning (m-learning) would, however, make a huge difference for the ODL TVET teacher trainees. With the coming of cheap mobile phones, most of them costing an average of US\$16, the learners would be able to converse with their tutors and fellow learners on education matters. Some brands of these phones can also be charged using both solar power and electricity. Such phones would ideal for the learner in the rural areas who could use them for discussions, questions and communication of urgent issues. Those with smart phones would have the advantage of accessing e-mail, internet and e-learning platforms.

5.0 CONCLUSION

Although the importance of technical and vocational education is widely acknowledged in Malawi, the country faces an acute shortage of technical and vocational education teachers. This problem is compounded by the fact that there is currently no institution in the country that trains TEVET teachers. At present, TEVET teachers acquire their skills on the job and the staffing levels in all the public colleges falls short of the requirement.

However, this paper has shown that the situation could be different if ODL is adopted in the training of TEVET teachers. Among other issues, ODL would improve access to tertiary education and make it more equitable to all. ODL would also significantly reduce the cost of training TEVET teachers so that the output would eventually be high. The paper has also suggested two models that would be applied in the training of these teachers. The programmes could either be conducted at existing institutions or a new college.

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